

**NATURAL RESOURCES CONSERVATION SERVICE  
OPERATION AND MAINTENANCE PLAN  
ARIZONA**

**STREAMBANK AND SHORELINE PROTECTION  
(Ft.)**

**CODE 580**

Cooperator \_\_\_\_\_ Date \_\_\_\_\_

Address \_\_\_\_\_

Location: Section \_\_\_\_\_ Township \_\_\_\_\_ Range \_\_\_\_\_ Quad Sheet Name \_\_\_\_\_  
 Northing \_\_\_\_\_ Easting \_\_\_\_\_ **OR** Longitude \_\_\_\_\_ Latitude \_\_\_\_\_

NRCS Field Office \_\_\_\_\_ County \_\_\_\_\_

This conservation practice is an asset to your farm or ranch. This practice will need periodic operation and maintenance to maintain satisfactory performance. The life of this practice or system is at least 15 years. The life of this practice can be assured or extended by thorough and timely operation and maintenance.

**GENERAL RECOMMENDATIONS**

This practice will require you to perform periodic maintenance and may also require operational items to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

- The treatments or measures should be inspected periodically, especially after major storm events to determine whether it is functioning properly or if repairs are needed.*
- Maintain vigorous growth of desirable vegetative coverings. The vegetative cover shall be maintained by mowing, fertilizing or burning when needed. Trees can cause leaks and safety hazards and should not be permitted on the embankment.*
- Erosion shall be repaired and if necessary protected to prevent additional erosion.*
- Eradicate or otherwise remove all rodents or burrowing animals that have or may potentially damage any part of the delivery or application facilities. Immediately repair any damage caused by their activity.*
- Immediately repair any damage resulting from vandalism, vehicles, or livestock.*
- Inspect for safety of people or animals using the area near the treatments or measures.*
- Inspect the integrity of fences, access roads, water access, crossings and other livestock control measures. Replace or repair as necessary. All fences, railings, and/or warning signs shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.*
- Soil bioengineering measures should be assessed during drought and immediately after high flows. Inspection of bank and channel measures should be conducted during low-water conditions to allow viewing of the measure as well as changes to the stream bed that may affect future integrity of the system. Early failure is an inherent risk of soil bioengineered structures systems that are not fully effective until the plants are well rooted and the stems reach a particular size and density. Repair and replant as required.*
- Periodically remove bars that can cause reduced capacity and damage to stream channel stability and bank protection taking into consideration fish habitat, fill and removal permit regulation and period of the year work can be performed in the water portion of the stream.*
- Appurtenances such as trash racks, outlet structures, and valves shall be kept free of trash, debris, foreign materials or blockage and replaced when needed.*

- *All settlement or cracks in the soil should be investigated to determine the cause and immediately repaired.*
- *Check all timber or lumber sections for decay and other damage, especially sections in contact with earth or other materials. Repair damaged sections.*
- *Repair spalls, cracks and weathered areas in concrete surfaces.*
- *Repair or replace rusted or damaged metal and apply paint as a protective coating.*
- *Repair and/or fertilize damaged vegetation in accordance with NRCS conservation practice standard Critical Area Planting, Code 342.*
- *Control grazing on the streambank or shoreline, as necessary*

### ***Kellner Jacks and Spider Jacks***

- *Steel legged Kellner Jacks and Spider Jacks are relatively maintenance free. Usually, the greatest need for maintenance is for the vegetation within the jetty field. However, vandals can remove steel angle iron, cable, poles, and fasteners. Impact from massive floating debris can bend or break jack legs and break wires.*
- *Inspect individual jacks for bent legs or broken lacing wires. Replace wires as necessary.*
- *Inspect for broken cables or dislodged anchors. Repair cables, reset anchors, or install new jetty lines as necessary.*
- *Inspect the riverbank, particularly at the upstream end of the line and at all anchors, to determine if the jetty line is in danger of becoming ineffective from bank erosion or if anchors are in danger of being washed out. Take corrective action as required.*

### ***Rock Riprap***

- *Remove tree or brush vegetation growing through the rock riprap. Only grass-like vegetation is to be allowed to thrive and spread.*
- *Replace or reposition rock as needed to maintain slopes and cover over base materials. Replacement rock should be similar to original rock. Replace to original grades, as necessary.*
- *Check overland flow and side drainages to insure that floodwaters from the sides will not damage the riprap. Divert or otherwise handle overland and side flows away from the rock riprap.*
- *Check all rock sections for cracking, accelerated weathering, delamination and disintegration.*

### ***Soil Cement***

- *Inspect for excessive scour and cracking. Repair major damage by replacing soil cement to its full thickness and compacting to design grade and specification.*

### ***Gabions and Reno Mattresses***

- *Gabion structures are flexible and will bend or shape themselves as a result of natural settlement but there are limits as to how much a gabion can move without failure. A critical item is to maintain support at the toe. Check for scour at the toe or scour that might advance to the toe.*
- *Wire mesh is subject to damage from floating debris, water pollution, corrosion, wear from high velocity sediments, vandalism, etc. Repair broken wires and damaged baskets. Replace rock. After settlement has occurred, it might be necessary to place a concrete cap on some sections.*

Please contact your local Natural Resources Conservation Service Center for any additional technical assistance that you may need for implementation of this operation and maintenance plan.

